ASSESSING THE USE AND IMPACT OF E-RESOURCES OFFERED THROUGH E-SHODHSINDHU CONSORTIUM ON ACADEMIC COMMUNITIES AND LIBRARIES IN THE INSTITUTES OF TECHNOLOGY IN KARNATAKA

FINAL SYNOPSIS

Of the thesis submitted to Mangalore University in fulfilment of the requirement for the award of the degree of

DOCTOR OF PHILOSOPHY

In

LIBRARY AND INFORMATION SCIENCE

by

Mr. JAGADEESHA S.

Under the Guidance of

Dr. PURUSHOTHAMA GOWDA M.

University Librarian

Mangalore University, Mangalagangothri-574 199

DEPARTMENT LIBRARY AND INFORMATION SCIENCE

MANGALORE UNIVERSITY

MANGALAGANGOTHRI-574 199

KARNATAKA, INDIA

July 2025

CONTENTS		Page No.
1	Introduction	1
2	Review of Literature	2
3	Need for the study	6
4	Statement of the problem	7
5	Definition of key concepts	8
6	Significance of the study	9
7	Objectives of the study	9
8	Hypotheses	10
9	Scope and Limitations of the study	10
10	Methodology	11
10.1	Study population	11
10.2	Calculation of samples	12
10.3	Survey Instrument	12
10.4	Statistical analysis	14
11	Major Findings and observations	15
12	Recommendations	18
13	Chapterization	19
14	Conclusion	21
	References	23
	Publications	26

1. Introduction

With the advent of the digital age, academic institutions worldwide have embraced electronic resources (e-resources) as a fundamental component of learning and research. E-resources, which include e-journals, e-books, databases, and digital archives, have significantly transformed academic libraries by providing seamless access to scholarly materials (Narayanaswamy, 2023). In India, initiatives like e-ShodhSindhu have been pivotal in ensuring affordable and equitable access to e-resources for higher education institutions.

The e-ShodhSindhu Consortium, launched by the Ministry of Education (MoE), Government of India, in 2016, was created by merging three major library consortia: UGC-INFONET Digital Library Consortium, National Library and Information Services Infrastructure for Scholarly Content (N-LIST), and the INDEST-AICTE Consortium (Pathak & Pal, 2023). This initiative aims to provide cost-effective access to high-quality academic materials to universities, colleges, and research institutions. Karnataka, home to numerous Institutes of Technology, has significantly benefited from this initiative, with faculty members, researchers, and students utilizing these resources to advance academic and scientific research (Thorat, 2023).

The e-ShodhSindhu Consortium has empowered academic communities in Karnataka's Institutes of Technology by providing affordable and high-quality access to digital resources. However, for its full potential to be realised, institutions must bridge the gap in awareness, accessibility, and engagement. Libraries, educators, and policymakers must work collectively to enhance the utilization of digital repositories, ensuring that technology-driven institutions in Karnataka continue to thrive in the digital knowledge economy.

2. Review of Literature

To ensure a comprehensive understanding of the research landscape related to the use and impact of electronic resources (e-resources) in higher education, especially within technical institutions, a detailed review of existing literature was conducted using a range of credible academic databases and scholarly tools. The primary sources included Scopus, a leading abstract and citation database of peer-reviewed literature, which provided access to high-impact journals and conference proceedings in library science, information management, and educational technology. Google Scholar was also extensively used to retrieve more scholarly publications, including journal articles, theses, institutional reports, and open-access resources related to the e-ShodhSindhu Consortium and digital library usage in India.

2.1 Articles published on the use of e-ShodhSindhu

Mistri (2018) conducted a study at North Bengal University to investigate the use of e-resources provided by library users under the E-ShodhSindhu Consortium. The research focused on key aspects such as the purpose of use, challenges faced, benefits received, and overall user satisfaction with the consortium's digital content. The findings highlighted that users relied on these resources mainly for academic and research purposes, but also pointed out several usage barriers, such as lack of training and technical issues.

2.2 Articles published on the awareness of e-resources

Gaffar and Gunjal (2016) investigated the awareness, access, and usage of e-journals among research scholars at NIT Rourkela. The scope of the study is limited to research scholars at the institute, focusing solely on e-journals as part of the e-resources subscribed to by the Biju Patnaik Central Library. The study found that a significant number (80%) of the respondents were aware of e-journals, but about

20% lacked awareness. Among the participants, 73% were Ph.D. scholars, and a large portion (50%) preferred to access e-journals through personal efforts rather than depending on library orientation programs

A study by Ananda et al. (2017) investigated the awareness and usage patterns of electronic information resources (EIR) among undergraduate (UG) and postgraduate (PG) students. The study aims to understand the extent of students' awareness of EIR, their frequency of usage, and the purposes for which they use these resources. The study concluded that although students were generally aware of EIR, they faced significant technical challenges. The authors recommended that students receive more training on using EIR to improve their academic performance effectively.

2.3 Articles published on the use of e-resources

Siwach and Malik (2018) investigated the use and awareness of electronic resources among faculty and research scholars. The study focuses on determining the frequency, purpose, and challenges associated with using e-resources and the search strategies employed by users. The authors recommended conducting more training programs to enhance the efficient use of E-resources, as only 14.29% of respondents had participated in such programs.

Sritharan (2018) focused on the use and satisfaction levels of electronic information resources (EIR) by medical postgraduate trainees. The research aims to understand how medical professionals access and utilise electronic resources and the challenges they face. The study found that 98.6% of the respondents used electronic resources for learning and updating knowledge, while 71.6% used them for research. The Postgraduate Institute of Medicine Library was the primary access source for 56.7% of the trainees. The authors recommended improving internet access speed,

providing remote access to electronic resources, and increasing training programs to enhance users' skills in accessing EIR

Vasantha, Meera, and Dhanamjaya (2018) examined the use and satisfaction of electronic information resources (EIR) among research scholars at REVA University, Bangalore. The study aims to understand the usage patterns, satisfaction levels, and challenges research scholars face accessing these resources. Regarding satisfaction, 93% were delighted with electronic question papers, 69% were satisfied with electronic books and 54% with electronic journals. The authors recommended conducting regular training programs to enhance search skills and raise awareness about available electronic resources. Additionally, the authors suggested improving internet connectivity and providing remote access to EIR to address the identified issues.

Prasad and Baskaran (2018) investigated the utilisation and access to electronic resources by faculty members across four universities in South Tamil Nadu, such as Manonmaniam Sundaranar University, Madurai Kamaraj University, Alagappa University, and Mother Teresa Women's University. The study aimed to understand the extent of use, satisfaction levels, and challenges faculty members face while accessing electronic scholarly resources. The study was conducted among faculty members. The methodology employed survey questionnaires to gather information on usage patterns, satisfaction levels, and the benefits and barriers encountered while using electronic resources.

2.4 Articles published on the need, challenges, and impact of e-resources.

Puneeth (2019) focused on the growing importance of electronic resources (E-resources) in academic libraries. The study evaluates the need, benefits, and challenges associated with using E-resources in academic institutions, particularly how these resources transform libraries' services and operations. The author

recommends that academic libraries invest in better infrastructure and provide training programs for users to maximise the benefits of E-resources. The study concludes that using E-resources is essential for enhancing the quality of research and education in modern academic environments, and libraries should continue adapting to technological advancements to meet user needs.

Hemalatha and Mani (2019) explored the challenges and impact of using electronic resources (E-resources) among postgraduate students, research scholars, and faculty members in science departments at the University of Madras. The study's primary aim was to evaluate the extent of E-resource usage and the factors influencing their effectiveness in supporting academic and research activities.. The study recommends improving internet speed and providing off-campus access to E-resources to enhance usability. The authors also suggest that the library should conduct user education programs to improve awareness and maximise the use of E-resources among students and faculty.

The review of literature presented in this chapter has provided a comprehensive understanding of the evolving landscape of electronic resources (e-resources) and their integration into academic institutions, particularly within the context of Indian technological institutes. The e-ShodhSindhu Consortium, established by the Ministry of Education, Government of India, has emerged as a pivotal initiative to democratise access to high-quality e-resources across Indian higher education institutions. Previous research underscores the positive influence of such consortia in enabling resource sharing, reducing costs, and elevating the academic output of subscribing institutions. However, gaps persist in understanding the specific patterns of use, levels of awareness, institutional support mechanisms, and the measurable academic impact of these resources, particularly in the context of Institutes of Technology in Karnataka.

3. Need for the study

The rapid expansion of digital information resources has profoundly transformed India's academic and research landscape. In response to the growing demand for equitable access to scholarly content, the Government of India established the e-ShodhSindhu Consortium, integrating several existing digital initiatives to provide high-quality e-resources to higher education institutions (MHRD, 2015). While the program has proven instrumental in offering access to international journals, databases, and e-books, there remains a significant gap in understanding how these resources are utilized at the institutional level, particularly in Institutes of Technology across Karnataka.

Institutes of Technology, given their research-intensive nature, are ideal environments to assess the effectiveness of such digital resource investments. However, a limited body of empirical research evaluates the usage patterns and the impact of e-ShodhSindhu resources on academic productivity, teaching methodologies, and library service models (Singh et al., 2020). Understanding the user behaviour of faculty, researchers, and students towards these e-resources is crucial in optimizing digital library services and policy formulation.

Moreover, significant regional and institutional variability exists in digital resource adoption, which is often influenced by technological infrastructure, digital literacy, and administrative support (Kumar & Nisha, 2016). A focused study on Karnataka's Institutes of Technology is essential, as the state hosts some of the most prestigious technical institutions that play a pivotal role in national innovation and research output. However, whether these institutions are leveraging the full potential of e-ShodhSindhu remains an open question.

The increasing shift toward remote learning and digital pedagogy in the post-pandemic era further underscores the need for this study. E-resources are no longer

supplementary; they have become central to curriculum delivery, research collaboration, and academic discourse (Mishra et al., 2020). Evaluating their impact on academic performance and institutional effectiveness can guide future investments and training efforts. In this context, this study aims to bridge the knowledge gap by assessing the actual use, perception, and impact of e-ShodhSindhu resources within the academic ecosystem of Karnataka's Institutes of Technology. The findings will contribute to evidence-based improvements in digital resource planning, policy enhancement, and academic library management.

4. Statement of the problem

The problem statement was perceived under ***"Assessing the Use and Impact of E-resources offered through e-ShodhSindhu Consortium on Academic Communities and Libraries in the Institutes of Technology in Karnataka".*** Electronic resources (e-resources) have emerged as indispensable tools for knowledge creation, dissemination, and innovation in the evolving landscape of academic research and higher education. Recognizing this, the e-ShodhSindhu consortium, initiated by the Ministry of Education, Government of India, has aimed to bridge digital divides by providing equitable access to high-quality scholarly content across Indian universities and institutions, primarily technical and professional. Despite the potential of this initiative, there remains a critical gap in understanding the extent of its usage, accessibility, and impact on academic communities, particularly in Institutes of Technology in Karnataka, a state known for its robust technical education ecosystem.

Therefore, this study seeks to fill the existing research gap by systematically assessing the usage patterns, barriers, and academic impact of e-resources provided through the e-ShodhSindhu consortium among academic stakeholders in selected Institutes of Technology in Karnataka. The findings are expected to inform

institutional strategies and national-level policymaking to optimize the utility and reach of e-resources in the higher education sector.

5. Definition of key concepts

- **E-resources (Electronic Resources):** E-resources in this study means the digital materials or content accessed electronically, including e-journals, e-books, databases, conference proceedings, theses, multimedia content, and institutional repositories. These resources are typically accessible via the Internet and are integral to contemporary academic research and learning.
- **E-ShodhSindhu Consortium:** A digital library consortium initiated by the Ministry of Education, Government of India, under the National Mission on Education through ICT (NMEICT), aimed at providing affordable access to high-quality academic e-resources across Indian universities, colleges, and technical institutions.
- **Academic Communities:** A collective term for stakeholders involved in academic institutions, including faculty, researchers, students, and doctoral scholars. These communities rely heavily on information access for teaching, learning, and scholarly activities.
- **Impact Assessment:** A structured process of evaluating the outcomes, benefits, and changes brought about by a program, policy, or intervention. In this context, it analyses how e-ShodhSindhu resources influence research productivity, teaching quality, publication output, and user satisfaction.
- **Use Patterns:** Refers to the quantitative and qualitative analysis of how e-resources are accessed and utilized by users. This medium includes frequency of access, types of resources used, access points (remote/on-campus), and usage purpose (research, teaching, assignments).

- **Libraries in the Institutes of Technology:** Academic libraries in technical institutions, such as the National Institute of Technology Karnataka (NITK), Surathkal, Indian Institute of Technology Dharwad (IIT Dharwad), and The Indian Institute of Science (IISc), Bangalore, which serve as knowledge hubs supporting the teaching-learning ecosystem through both physical and digital collections.

6. Significance of the study

The digital revolution has profoundly transformed academic research and learning landscapes. E-resources are vital for knowledge acquisition, dissemination, and collaboration, especially within premier technological institutions. The e-ShodhSindhu Consortium, launched by the Ministry of Education (MoE), Government of India, has been a pioneering initiative to provide access to high-quality e-resources across Indian higher education institutions. This study aims to explore, evaluate, and critically analyze the use and impact of these digital assets within the Institutes of Technology in Karnataka, a state renowned for its scientific and technological academic excellence.

7. Objectives of the study

- To examine the awareness and accessibility of e-resources provided through the e-ShodhSindhu Consortium among faculty, researchers, and students in the Institutes of Technology in Karnataka.
- To analyze the usage patterns of e-resources across various disciplines and faculty, students, and doctoral researchers.
- To assess academic users' perceived usefulness and satisfaction levels regarding the quality, relevance, and usability of e-resources.
- To identify the impact of e-resources on academic productivity, including research output, teaching quality, and learning efficiency.

- To explore challenges faced by users in accessing or utilizing the e-resources effectively.
- To suggest strategies for improving access, awareness, and integration of e-resources into academic workflows and library services.

8. Hypotheses

H_1. There is a significant difference in the awareness levels of e-ShodhSindhu resources among different user groups.

H_2. There is a significant relationship between the frequencies of e-resource usage and user satisfaction.

H_3. Utilizing e-ShodhSindhu resources has a significant impact on the research productivity of academic users.

H_4. There is a correlation among the challenges faced by users in accessing or using e-ShodhSindhu resources.

9. Scope and Limitations of the study

The present study is focused on assessing the use and impact of e-resources provided through the e-ShodhSindhu Consortium on academic communities and libraries in premier institutes of technology in Karnataka. Specifically, the scope is limited to Faculty members, research scholars, and students (both undergraduate and postgraduate) affiliated with the National Institute of Technology Karnataka (NITK), Surathkal, Indian Institute of Technology Dharwad (IIT Dharwad), and Indian Institute of Science (IISc), Bangalore.

The study emphasizes understanding the awareness, access, and usage patterns of e-ShodhSindhu resources, the perceived usefulness and impact of these e-resources on research productivity, teaching quality, and learning outcomes, the role of institutional libraries in promoting, managing, and facilitating access to the consortium's resources and the challenges and barriers experienced by different user groups in utilizing e-ShodhSindhu services effectively. The study is restricted to

these three institutions due to their prominence in science and technology education and their access to the e-ShodhSindhu Consortium.

Furthermore, the study examines explicitly resources provided through the e-ShodhSindhu Consortium. It does not consider other e-resource platforms or consortia that may be accessible to the academic community. The study does not evaluate the technical challenges of accessing e-resources, such as bandwidth limitations, software compatibility, or digital literacy. The study assesses the perceived impact of e-resources on academic productivity, but it does not quantitatively measure actual research outputs (e.g., number of publications, citations, etc.). In addition, the study does not account for external factors that may influence the use of e-resources, such as institutional policies, budget allocations, or library staffing levels.

10. Methodology

10.1 Study population

The sample population for this study was students, faculty members, and research scholars of the National Institute of Technology Karnataka (NITK), Surathkal, Indian Institute of Technology Dharwad (IIT Dharwad), and Indian Institute of Science (IISc) Bengaluru. The population for the study was selected based on the sample calculation formula. There are various formulas for calculating the required sample size based on whether the collected data is of a categorical or quantitative nature. This study followed the formula given by Krejcie and Morgan (1970).

$$\mathrm{s} = \frac{x^2 \mathrm{NP}(1-P)}{d^2(\mathrm{N}-1) + x^2 \mathrm{P}\,(1-\mathrm{P})}$$

s = required sample size.

x^2 = The table value of Chi-square for 1 degree of freedom at the desired 99% confidence level was (6.635).

N = the population size.

P = the population proportion (assumed to be 0.50 since this would provide the maximum sample size).

d = the degree of accuracy expressed as '*p*' (i.e. Margin of error=0.035).

10.2 Calculation of samples

$$s = \frac{6.635 \times 9405 \times 0.50\,(1 - 0.50)}{(0.035)^2(9405 - 1) + 6.635\,(0.50)\,(1 - 0.50)}$$

$$s = \frac{62402.175 \times 0.25}{0.001225 \times 9404 + 1.65875}$$

$$s = \frac{15600.54375}{13.17865}$$

$$\mathbf{s = 1183.7740}$$

The above formula was used to determine the sample size with a 99% confidence level and a margin of error 0.035. After sample calculation, a sample size of **1183.7740** was required. Therefore, the sample size was rounded off to **1184**.

10.3 Survey Instrument

A structured questionnaire was designed and administered to the target respondents to collect primary data for the study. The questionnaire was developed to gather comprehensive information relevant to the study's objectives. It consisted of close-ended questions organized into seven sections to ensure clarity and systematic coverage of the research dimensions.

- **Section A: Demographic Information:** This section aimed to capture the background details of the respondents, including variables such as designation, department, gender, age group, highest qualification, and experience. This information was essential for understanding the

respondents' profile and performing demographic-wise analysis of responses.

- **Section B: Awareness of E-ShodhSindhu:** This section assessed the respondents' familiarity with the E-ShodhSindhu Consortium. It included questions related to the awareness level, sources of information, and general understanding of the consortium's objectives and available resources.
- **Section C: Usage Pattern of E-ShodhSindhu:** The questions in this section focused on the frequency and purpose of using E-ShodhSindhu resources. It explored how often the respondents accessed the consortium, the types of resources used, and the preferred access points.
- **Section D: Impact of Use of E-ShodhSindhu Consortium:** This section sought to evaluate the impact of E-ShodhSindhu usage on the academic and research activities of the users. It examined improvements in teaching, learning, research productivity, and overall academic performance as influenced by the consortium.
- **Section E: Challenges of E-ShodhSindhu Consortium:** This part of the questionnaire aimed to identify users' barriers and issues while accessing or utilizing E-ShodhSindhu resources. The questions addressed technical difficulties, access restrictions, and lack of awareness.
- **Section F: Need for Orientation/Training Programmes on E-ShodhSindhu:** This section focused on the respondents' perceptions of the need for structured orientation or training programmes to enhance the effective use of the consortium. It aimed to capture suggestions regarding such programmes' mode, frequency, and content.
- **Section G: Level of Satisfaction with Existing E-ShodhSindhu Resources:** The final section measured the overall satisfaction of users with

the available E-ShodhSindhu resources in terms of quantity, quality, user-friendliness, relevance, and accessibility.

The structured nature of the questionnaire ensured consistency in responses and facilitated quantitative analysis. The instrument was pilot-tested before the main data collection to verify its reliability and clarity. Minor modifications were made based on feedback from the pilot study. Furthermore, a Google form was created to get the required sample size (N = 1184), and the link was sent to the email IDs of students, faculty members, and research scholars. After the poor response (n=331) to the Google form, the researcher personally distributed 894 questionnaires to students, faculty members, and research scholars. Out of which, 862 filled questionnaires were received. After collecting and double-checking the correctly filled questionnaires, 853 were selected for coding for the data analysis. 9 questionnaires were excluded due to incomplete responses. 1184 (331 +853) were received through Google form, and questionnaires collected in person from the respondents were considered.

Table 1.1 Distribution and Receipt of Questionnaires

Sl. No	Category	Total Population	Questionnaires Distributed	Responses Received	Percentage
1	Faculty	897	90	84	93.33%
2	Research Scholars	2011	200	191	95.50%
3	Students	6497	935	909	97.22%
Total		**9405**	**1225**	**1184**	**95.35%**

10.4 Statistical analysis

The data gathered through questionnaires was entered into the software, the Statistical Package for the Social Sciences (SPSS) version 26, to ensure a robust statistical examination of the collected data. The analysis included using descriptive statistics such as percentages, means, and standard deviations to summarize the data. In addition, a cross-tabulation was carried out, with the primary attention being placed. Chi-square and ANOVA tests were conducted to test the hypotheses and explore the relationship between library usage patterns and user categories. Finally, the results were presented in the form of tables and figures.

11. Major findings and observations

- The study surveyed 1,184 respondents from selected Institutes of Technology in Karnataka. NIT Surathkal had the highest participation (459, 38.77%), followed by IIT Dharwad (367, 31.00%) and IISc Bengaluru (358, 30.23%), reflecting strong engagement across both emerging and established institutions.
- As shown in the results, among the 1,184 respondents, males accounted for 55.16% (n=653) and females 44.84% (n=531), showing a slightly higher male representation. Overall, the gender distribution was relatively balanced.
- The result shows that students comprised the majority of respondents at 76.77% (n=909), followed by research scholars at 16.13% (n=191) and faculty at 7.10% (n=84). Each group offers valuable insights into the use and impact of e-resources in academia.
- The study shows that the 25–29 age group forms the most significant segment at 32.43% (n=384), followed by the 20–24 group at 27.54% (n=326). The 30–34 group (16.62%, n=197) likely includes senior research scholars and junior faculty actively engaged with e-resources.

- Respondents aged 35–44 (17.32%, n=205) represent mid-career faculty and professionals with sustained e-resource engagement. Participation drops in older age groups, with only 5.58% (n=72) from ages 45 and above, indicating limited input from senior academics.
- The study found that 96.54% (n=1143) of respondents were aware of the e-ShodhSindhu Consortium, reflecting strong visibility through library promotion and faculty support. Only 3.46% (n=41) were unaware, likely representing newer or less engaged users.
- The data shows that 67.61% of respondents learned about the e-ShodhSindhu Consortium through librarians, emphasising their key role in promotion and training. Additionally, 48.20% gained awareness via library orientation programs, especially during student inductions.
- Institute or university websites were a key awareness source for 39.43% of respondents, underscoring the need for informative digital portals. Additionally, 34.82% cited social media and online platforms, highlighting the growing role of decentralised digital outreach.
- On the other hand, Faculty and research guides informed 28.34% of respondents, highlighting the role of academic mentorship. Peer interactions (25.18%) and workshops (24.32%) also aided awareness, while 15.65% learned about the consortium independently, reflecting self-directed engagement.
- The results indicate that 41.20% of respondents are very familiar with the e-ShodhSindhu Consortium, showing strong engagement. About 27.63% are familiar, while 21.35% use it without familiarity, highlighting the need for better user orientation.

- The results highlight varied levels of awareness and understanding of e-resources among respondents. While 58.18% showed basic awareness, 41.81% expressed uncertainty or lack of clarity. Knowledge of specific types of e-resources remains limited, with most respondents neutral or disagreeing.
- Over half the respondents recognise the benefits of e-resources, though a quarter still lean towards traditional formats. Notably, awareness of open-access resources is critically low, with 61.33% strongly disagreeing, indicating an urgent need for targeted orientation and training programs.
- The study shows that 50.22% of respondents use e-ShodhSindhu occasionally, indicating need-based access. Daily users (22.48%) reflect a core group of active users, while 18.46% access it 2–3 times a week, showing moderate engagement. Weekly and monthly users are fewer at 7.70% and 1.14%, respectively.
- The results show that 54.86% of respondents spend 1–2 hours per session on e-ShodhSindhu, indicating sustained academic use. Another 36.74% spend over 2 hours, reflecting intensive engagement, while only 8.40% use it for less than an hour, pointing to brief or occasional access.
- The findings reveal high usage of e-journals (58.18%) and strong engagement with databases (84.16% moderate or higher). In contrast, e-books show lower adoption, with 41.73% reporting low or very low use, possibly due to preferences or unfamiliarity with platforms.
- Reports and standards show subject-specific use, with 34% reporting limited engagement. Reference works are least used (61.33% very low), likely due to alternative sources. Digital archives show mixed usage—31.32% high use, but 64.31% low, indicating underutilisation or access issues.

12. Recommendations of the study

- ***Strengthen Awareness and Orientation Programs*:** Conduct frequent orientation sessions, and awareness campaigns through institutional websites and social media, and promote librarian-led user training to ensure broader and deeper awareness of e-ShodhSindhu resources.
- ***Develop Comprehensive Training Modules*:** Offer structured workshops on advanced search techniques, database navigation, and resource discovery, focusing on discipline-specific needs to enhance user expertise and confidence.
- ***Expand and Update Content Regularly*:** Collaborate with the consortium to address content coverage gaps, ensure timely updates of journals and databases, and prioritise full-text and open-access resources to meet evolving academic and research requirements.
- ***Promote Academic and Instructional Integration*:** Encourage faculty members to incorporate e-resources into teaching, curriculum development, student assignments, and projects to increase usage beyond research activities.
- ***Improve Remote Access and Technical Compatibility*:** Strengthen off-campus access mechanisms, resolve device/browser compatibility issues, and promote the use of remote access portals for seamless connectivity and accessibility.
- ***Enhance Resource Discoverability and Search Features:*** Improve metadata, bibliographic details, and filtering options; develop innovative search tools to make finding relevant journals, reports, standards, and reference materials easier for users.
- ***Foster a Strong Research and Publishing Culture:*** Promote e-resources for research activities such as literature reviews, citation tracking, and staying

updated with newly published research, by embedding these practices in research training and workshops.

- ***Establish Targeted Support for Research Scholars:*** Set up dedicated library helpdesks and mentorship initiatives to assist research scholars in accessing scholarly resources and enhancing research quality and engagement.
- ***Collect Feedback and Improve Continuously:*** Conduct regular user satisfaction surveys, assess feedback critically, and work with the consortium to continuously improve platform performance, accuracy, flexibility, and resource availability.
- ***Empower Librarians and Faculty as E-resource Champions:*** Provide librarians and faculty members with updated training and support tools to serve as resource ambassadors, promoting optimal usage, guiding users, and supporting institutional research growth.

13. Chapterization

The present study has been divided into five chapters as follows.

Chapter 1. Introduction

This introductory chapter provides a concise overview of the study, focusing on the key concepts of the present study specifically within the context of the Institutes of Technology in Karnataka. It establishes the foundation for the research by presenting the Statement of the Problem, defining the Objectives and Hypotheses, and outlining the Methodology, including the Sampling Techniques and Methods of Data Analysis employed. Additionally, the chapter delineates the Scope and Limitations of the study.

Chapter 2. Review of Literature

The second chapter thoroughly reviews the literature related to the study, offering a comprehensive overview of the existing research and works completed in

the field. This chapter delves into various perspectives and findings from previous studies relevant to the area of inquiry. This chapter was organized into subheadings focusing on key themes. Through this detailed literature review, the chapter synthesizes prior research, highlighting significant contributions and identifying gaps the current study aims to address, thereby providing a solid theoretical foundation for the subsequent analysis and conclusion.

Chapter 3. An Overview of E-ShodhSindhu Consortium and Institutional Profile

This chapter covers the introduction to e-resources, the concept of Library Consortia, the overview of the e-ShodhSindhu Consortium, the benefits of e-resources Consortia, challenges faced by Consortia, and future trends in e-resource Consortia. This chapter also covers institutional profiles and concludes.

Chapter 4. Data Analysis and Interpretation

This chapter offers an in-depth examination of the collected data, beginning with a clear outline of the structured data collection methods and research design, establishing the foundation for how the data was obtained. It proceeds to a detailed analysis and interpretation, employing graphical and tabular formats to illustrate significant trends, patterns, and correlations. Statistical techniques ensure accurate interpretation of the results, enabling the formulation of meaningful insights aligned with the study's objectives and hypotheses. Ultimately, this chapter transforms raw data into valuable findings that form the basis for the conclusions and recommendations presented in the chapters that follow.

Chapter 5. Findings, Recommendations, and Conclusion

This chapter encapsulates the core findings of the study, offering practical recommendations, highlighting potential areas for future inquiry, and drawing the study to a close. The results are succinctly presented in alignment with the research objectives, providing valuable insights into the utilization and impact of e-resources accessed through the e-ShodhSindhu Consortium. Building on the data analysis, the chapter proposes actionable strategies to enhance user experience and satisfaction. It also acknowledges the study's limitations and outlines promising directions for further research. The conclusion concisely reiterates the study's contributions, underlining the significance of the findings for academic libraries. The chapter concludes with a comprehensive bibliography and appended research instruments, ensuring transparency and completeness.

14. Conclusion

The present study systematically examined the awareness, usage patterns, challenges, and perceived impact of the consortium's resources among academic stakeholders. By surveying a diverse respondent pool comprising students, research scholars, and faculty members from leading institutes such as NITK Surathkal, IIT Dharwad, and IISc Bengaluru, the study captured comprehensive insights into the academic community's engagement with e-resources. The findings revealed that while awareness of the e-ShodhSindhu Consortium is notably high, actual usage patterns vary, with a significant proportion of users accessing resources occasionally rather than regularly. E-journals and academic databases emerged as the most utilised resources, whereas e-books, reference works, and digital archives showed lower engagement levels.

Furthermore, the study identified critical challenges such as lack of awareness, compatibility issues, and limited training opportunities that impede optimal resource

utilisation. Notably, the impact assessment highlighted that while e-ShodhSindhu significantly supports student empowerment and equitable access, its influence on research quality enhancement and engagement remains limited, indicating a gap between access and academic productivity. The study contributes meaningfully to the discourse on e-resource utilisation in higher education. It further provides actionable directions for consortium administrators, librarians, and policymakers to enhance the effectiveness and outreach of e-ShodhSindhu resources.

References

Ananda, S. K., Tejashwini, B., Akshatha, A. K., & Jagdeesh, G. E. (2017). Use and awareness of electronic information resources among UG & PG students of T John College, Bangalore: A study. *International Journal of Library and Information Studies*, *7*(1), 20-25.

Gaffar, A., & Gunjal, B. (2016). Access and usage of e-journals by research scholars in National Institute of Technology (NIT) Rourkela, Odisha: A case study. *Journal of Indian Library Association*, *52*(1&2), 17-22.

Hemalatha, R. K. S., & Thiruvengada Mani, T. K. (2019). Usage of electronic resources in science subjects by the Madras University Library System. *Indian Journal of Information Sources and Services*, *9*(1), 35-39. https://doi.org/10.51983/ijiss.2019.9.1.598

Krejcie, R. V., & Morgan, D. W. (1970). Determining sample size for research activities. *Educational and Psychological Measurement, 30*(3), 607–610. https://doi.org/10.1177/001316447003000308

Kumar, A., & Nisha, R. (2016). *Factors influencing digital technology adoption in Indian libraries across regional and institutional contexts*, Digital Transformation in Indian Libraries: Adoption and Challenges.

Ministry of Human Resource Development. (2015). *e-ShodhSindhu: Consortia for Higher Education e-Resources*. Government of India. Retrieved from https://www.inflibnet.ac.in/ess/

Mishra, L., Gupta, T., & Shree, A. (2020). *Online teaching-learning in higher education during the lockdown period of COVID-19 pandemic*. *International Journal of Educational Research Open, 1*, 100012. https://doi.org/10.1016/j.ijedro.2020.100012

Mistri, S. K. (2018). Use of E-Resources in the e-ShodhSindhu Consortia: A Study of North Bengal University Library Users. *SRELS Journal of Information Management, 55*(6), 330–333.

Narayanaswamy, B. V. (2023). Awareness and utilization of ICT initiatives of Ministry of Education, Government of India: A study on review of literature. *Journal of Advances in Library and Information Science, 12*(3), 78–94.

Pathak, P., & Pal, D. R. A. (2023). E-resource utilization in IIM libraries: Insights from faculty and student surveys. *Alochana Journal, 5*(1), 98-112.

Puneeth, B. M. (2019). Effectiveness of using E-resources in academic libraries: A study. *International Journal of Library and Information Studies*, *9*(4), 74-81. http://www.ijlis.org

Prasad, M., & Baskaran, C. (2018). Use of electronic resources on scholarly information access by the faculty members of state universities in South Tamil Nadu. *Journal of Advances in Library and Information Science*, *7*(4), 275-283. https://doi.org/10.51983/jalis-2018.7.4.198

Singh, S., Garg, N., & Sharma, C. (2020). Use of e-ShodhSindhu Consortium by research scholars: A comparative study of Kurukshetra University and Maharshi Dayanand University. *Library Philosophy and Practice (e-journal)*, No. 4174, 1–22. https://doi.org/10.7293/LibPhilPract.4174

Siwach, A. K., & Malik, S. K. (2018). E-resource use by science faculty and research scholars: A case study of Panjab University, Chandigarh. *Journal of Advancements in Library Sciences*, *5*(2), 27-35. https://www.researchgate.net/publication/327280856

Sritharan, T. (2018). Evaluation of usage and user satisfaction on electronic information resources and services: A study at Postgraduate Institute of Medicine Library, University of Colombo. *Journal of the University Librarians Association of Sri Lanka*, *21*(2), 73-88. https://doi.org/10.4038/jula.v21i2.7918

Thorat, A. M. (2023). Role of e-ShodhSindhu consortium in higher education: A study. *Academia Journal of Library and Information Science, 6*(2), 43–58.

Vasantha, B., Meera, B. M., & Dhanamjaya, M. (2018). Usage of electronic resources by the research scholars of REVA University: A study. *Asian*

Journal of Information Science and Technology, *8*(3), 71-74. https://doi.org/10.51983/ajist-2018.8.3.198

Publications by the Researcher

Jagadeesha, S., & Gowda, Purushothama M. (2024). Awareness, Accessibility and Academic Utility of e-ShodhSindhu Resources among Academics in Technical Institutes of Karnataka. *ShodhKosh: Journal of Visual and*

Performing Arts. 5(6), 1908-1915. ISSN(Online):2582-7472. DOI: https://doi.org/10.29121/shodhkosh.v5.i6.2024.5097

Jagadeesha, S., & Gowda, Purushothama M. (2024). Impact Assessment of e-ShodhSindhu on Library Services and Digital Learning Ecosystems in Technical Education Institutions. *Annals of the Bhandarkar Oriental Research Institute*. CI(6),17-25 ISSN:0378-1143

Jagadeesha, S., (2024) The Future Role of Smart Libraries for Smart Users: An overview. *International Journal of Research in Library Science (IJRLS)* 10(1), 145-150. ISSN:2455-104X.
DOI: https://www.ijrls.in/wp-content/uploads/2024/03/ijrls-1741.pdf

Jagadeesha, S., (2024). Use of Information Communication Technology (ICT) in Library Services: A study. *International Journal of Research and Analytical Reviews (IJRAR)*, 11(1), 387-396 ISSN:2349-5138
DOI: https://www.ijrar.org/papers/IJRAR24A3237.pdf

Jagadeesha, S., & Gowda, Purushothama M. (2024). Presented a paper entitled "Bridging Knowledge Gaps: Assessing the Utilisation of E-Resources Consortia by Academics" in 3rd International Conference on Knowledge Management in Higher Education Institutions (ICKHI 2024) organized by

Manipal University Jaipur and Kings Mongkut's University of Technology North Bangkok, Thailand held on 30th and 31st January 2024.

Jagadeesha, S., & Baradol, A.K. (2016). Presented a paper entitled "Library Consortia approach for Higher Education: An overview" in National Conference on Redefining Libraries in Electronic Age organized by VTU Belgaum on 20th and 21st Dec.2013.

Jagadeesha, S., & Baradol, A.K. (2016). Presented a paper titled "Digital Library Consortia Models for Higher Education" in National Level Seminar on Impact of Modern Technology on Higher Education organized by GFGC Nelamangala Bangalore on 26th Feb 2016.

Jagadeesha, S., & Gowda, Purushothama M. (2023). Presented a paper entitled "Evaluating User Satisfaction and Utilization Trends of e-ShodhSindhu E-resources in Technical Institutes of Karnataka." in the National Level Conference on Intellectual Property Rights in the Digital Era: Issues and Challenges held on 25th Nov. 2023.

Jagadeesha S.
Research Scholar

Dr. Purushothama Gowda M.
Research Guide